ABSTRACT OF THE DISCLOSURE

The device according to the present invention relates to phase conjugate conversion and wavelength conversion. This device includes a polarization beam splitter and a polarization maintaining fiber (PMF). The polarization beam splitter has first, second, and third ports. The first port is supplied with signal light including first and second polarization components respectively having first and second polarization planes orthogonal to each other, and with pump light. The first and second ports are coupled by the first polarization plane, and the first and third ports are coupled by the second polarization plane. The PMF has first and second ends, and has a polarization mode to be maintained between the first and second ends. The first end is optically connected to the second port so that the first polarization plane is adapted to the polarization mode, and the second end is optically connected to the third port so that the second polarization plane is adapted to the polarization mode. Converted light generated by four-wave mixing based on the signal light and the pump light in the PMF is output from the first port, so that the converted light can be taken out by an optical circulator.